

REMARKS

Applicants respectfully request reconsideration of the present application and consideration of the following remarks.

Claims 1-67 are currently pending. Of these claims, claims 1-43 have been withdrawn and 44-67 stand rejected.

35 U.S.C. § 103 Rejections

The Examiner has rejected Claims 45, 46-48 and 60-62 under 35 U.S.C. § 103(a) as being unpatentable over Deucher (U.S. Patent No. 5,610,968). In particular the Examiner states:

Regarding claims 45 and 48, Deucher teaches an apparatus which includes:

support frame (A);

CT scanner subsystem (C) rotatably mounted to the frame, the CT scanner subsystem having a gantry defining at least one air passage (60), and a radiator (48) mounted to the gantry;

a plenum (532), the plenum and the gantry jointly defining a confined volume; and

a fan (58).

However, Deucher fails to teach that the plenum is mounted to the frame.

Although Deucher's plenum is mount on the rotating gantry, one would be motivated to design and mount the plenum on the stationary gantry in order to save space and make structurally simpler rotating gantry while providing the air flow from fan to air passage, air passage to confined volume, confined volume to a radiator (figure 4).

(pgs. 2-3, Office Action 11/20/02).

The Applicants, respectfully disagree with the Examiner's contention that claims 45, 46-48, and 60-62 are unpatentable over Deucher under 35 U.S.C. 103(a). For example, consider the following passage from Deucher:

With reference to FIGS. 3 and 4, an air flow passage 50 is defined by stationary ducts disposed around the gantry. The air flow passage is an open-ended loop so that air is drawn from and released into the surrounding

room. The second heat exchanger 48 thermally connects the air flow passage and the water passage loop. In the preferred embodiment, the second heat exchanger 48 is a large diameter circular radiator and has an effective steady-state counter-flow heat capacity UA₂. The water-air heat exchanger includes a series of radial vanes that surround the rotating gantry C. As the rotating gantry rotates, the vanes function as a squirrel cage blower to pump cool air from a plenum 54 through the vanes and discharging hot air to an annular surrounding region 56 of the air passage 50. Variable speed blowers 58 are mounted on the stationary gantry to draw cool ambient room air through the input ducts 60 to provide a positive air flow into the plenum 54. In this manner, heat from the circulating water is transferred to the air, thus cooling the water. Hot air from annular region 56 is discharged into the room or can be connected to ceiling ducts which remove the heated air from the room.

(U.S. Patent No. 5,610,968, Deucher et al., Column 5, lines 1-20).

In other words, in order for the heat exchanger 48 to function correctly, the air has to flow from the rotating gantry, in a radially outward direction through the heat exchanger 48 and into the annular space 56 around the rotating gantry. In order for this air flow to take place, a high pressure plenum has to be located upstream of the heat exchanger 48, i.e., within the rotating gantry. Further, it will be appreciated, that if the plenum is mounted on the stationary gantry then air would flow in the direction from the plenum (stationary gantry) into the rotating gantry and thus, the heat produced by the x-ray source within the rotating gantry would not be removed. Accordingly, it is respectfully submitted that one of ordinary skill in the art would not be motivated to mount the plenum on the stationary gantry as suggested by the Examiner.

In view of the foregoing, it is respectfully submitted that the Examiner has failed to make a prima facie case of obviousness, as he is required to do. Thus claims 45, and 46-48, and 60-62, each of which depend on 45, are also not anticipated or rendered obvious by Deucher.

The Examiner has also rejected claims 44, 50-56, and 63-67 under 35 U.S.C. 103(a)

as being unpatentable over Deucher in view of Krug et al. (U.S. Patent No. 5,974,111).

In this regard, the Examiner has stated that:

Deucher teaches an apparatus which includes:

a base frame (A);

tunneling (12) mounted to the base frame and having a first end (42) and a second end (44) opposing the first end;

an x-ray source (B) which, when operated, creates radiation within the tunneling;

paneling (stationary gantry cover, A) located around the tunneling and the x-ray source so that the paneling and the base frame jointly define a housing (cavity of stationary gantry, A) around the tunneling and the x-ray source, the housing having an entry aperture (60), and an exit aperture (50), and having an air inlet opening (60); and

a fan (58) positioned to draw air through the air inlet opening into the housing, the housing being formed, the entry aperture sealing with the first end of the tunneling to an extent sufficient, and the exit aperture sealing with the second end of the tunneling to an extent sufficient so that the confines of the housing are at a higher pressure than externally of the housing when the fan draws air into the housing (if volume of the confined of the housing is smaller than external of the housing, pressure in the volume will be higher than external by physic's law, see figure 4).

However, Deucher merely teaches that the entry aperture is proximity to the first end and exit aperture is proximity to the second end of the tunneling.

Krug teaches an inspection system having elongated entrance and exit (figure 1).

In view of Krug, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate notoriously old and well known cooling system as taught by Krug to the system of Deucher in order to provide a flow cooling air through the elongated apparatus (figure 1). Accordingly, one would be motivated to locate the air entrance and exit any place within the apparatus because it would reduce the size of the stationary gantry. Furthermore, it should be noted that rearrangement of location of the part(s), that is, rearranging the mirror and reflector to reflect the first light and the second light substantially perpendicular to the reflector and separating element, are not considered novel (see In re Japikse, 86 U.S.P.Q. 70 at 74), and therefore an obvious expedient.

(pgs. 4-5, Office Action 11/20/2002).

The Applicants, however, respectfully disagree with the Examiner that claims 44, 50-56, and 63-67 are unpatentable under 35 U.S.C. 103(a) in view of the combination of

Deucher and Krug for at least the following reasons:

- (a) Reference numeral 42 indicates a water pump and not a first end of the tunneling;
- (b) Reference numeral 44 indicates a water reservoir and not a second end of the tunneling;
- (c) The Examiner's analysis indicates that he regards the housing to be the cavity of the stationary gantry A. However, the Examiner has already indicated that the cavity of the stationary gantry A, which is indicated by reference numeral 12, is the tunneling. As can be seen from Figure 16 of the drawings of the present application, the tunneling which is represented by reference numerals 12, 14, and 16 is clearly not the same as the housing 512 which comprises a plurality of contiguous panels 510, and the base frame 38. Thus, it is respectfully submitted that Deucher fails to teach or suggest paneling located around the tunneling and the x-ray source so that the paneling and the base frame jointly define a housing around the tunneling and the x-ray source as recited in claim 44;
- (d) If the cavity 12 is taken to be the tunneling, then as can be seen from Figure 4 of the drawings of Deucher, the air in the opening 60 does not seal with the first end of the tunneling. Further, the Examiner indicates that he considers the exit aperture to be the air flow passage 50 between the heat exchanger 38 and the room. Deucher fails to disclose that any portion of the air flow passage 50 seals with the second end of the tunneling (12);
- (e) The Examiner asserts that the confines of the housing are at a higher pressure than externally of the housing when the fan draws air into the housing. With respect, this assertion is clearly incorrect since if the housing is taken to be the cavity 12 within which a human patient is received, then clearly the housing 12 is open at both ends as can be seen from Figure 1 of the drawings, and is thus not confined. Since the housing

(12) indicated by the Examiner is not confined, it cannot be at a higher pressure than externally of the housing (12). Further, the Examiner's statement that "if volume of the confined (sic) of the housing is smaller than external (sic) of the housing, pressure in the volume will be higher than external (sic) by physic's law, see figure 4" is not understood since it is possible to have a smaller confined volume to be at a lower pressure than a region external to the housing;

(f) The Examiner's statement "Furthermore, it should be noted that rearrangement of location of the part(s), that is, rearranging the mirror and reflector to reflect the first light and the second light substantially perpendicular to the reflector and separating element, are not considered novel," is with respect, meaningless, since the present application has nothing to do with the rearrangement of mirrors and reflectors.

The following passage taken from pages 77 and 78 of the subject application indicate the significance of the "confines of the housing being at a higher pressure than externally of the housing:"

Because the air within the volume 540 remains above atmospheric pressure, and therefore above the pressure of the air externally of the housing 512, the air may leak slightly from between adjacent panels 510 of the housing 512 in a direction from within the housing 512 to an area around the housing 512. Because of the direction of leaking of air, ingress of dirt, moisture, and other contaminants into the housing 52 may be avoided. The positive pressure within the housing 512 thus protects the components within the housing 512 from dirt, moisture, and other contaminants.

The combination of Deucher and Krug fails to teach or suggest a housing around the tunneling and the x-ray source, in which the confines of the housing are at a higher pressure than externally of the housing, as recited in claim 44.

For the above reasons, it is respectfully submitted that claim 44 is not anticipated or rendered obvious by the combination of Deucher and Krug.

Given that claims 50-56 depend on claim 44, it is respectfully submitted that these claims are also not anticipated or rendered obvious by the combination of the Deucher and Krug.

Regarding claim 63, the Examiner states:

Deucher teaches operating an x-ray source (B) to radiate confines of tunneling; and

operating a fan to draw air into a housing defined externally of the tunneling and internally of paneling around the tunneling, the air pressurizing the housing (if confined volume of the housing is smaller than external of the housing, pressure in the volume will be higher than external by physic's law, see figure 4).

(pg. 6, Office Action 11/20/2002).

As noted above, in respect of claim 44, if the housing is taken to be the cavity 12 then Deucher fails to teach or suggest a housing defined externally of the tunneling and internally of the paneling around the tunneling. Further, it is not always the case that a confined volume defined by a housing is at a lower internal pressure than the environment external of the housing.

On account of the foregoing, it is respectfully submitted that Deucher fails to teach or suggest all limitations of claim 63. Accordingly claim 63 cannot be anticipated or rendered obvious by Deucher.

Further, given that claims 64-67 depend on claim 63, it is respectfully submitted that these claims are also not anticipated or rendered obvious by Deucher.

In conclusion, it is respectfully submitted that by virtue of the above arguments, the claims are in condition for allowance. Thus, it is respectfully requested that the response be considered and that the rejections to the claims be withdrawn.

Please charge any shortages or credit any overages to Deposit Account No. 02-2666.

Respectfully submitted,

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